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Preface

Over the years many important results in graph theory have come as a consequence of an increased application of various methods from other branches of mathematics. Algebraic graph theory and topological graph theory are somewhat typical in this respect, providing perhaps the most vivid and fruitful interplay of algebra, topology and combinatorics.

This Special Issue of Discrete Mathematics is dedicated to Algebraic and Topological Methods in Graph Theory and is meant to capture some of the most recent developments in the above-mentioned fields, with papers dealing with graph automorphisms and homomorphisms, transitivity in graphs, Cayley graphs, eigenvalues, distance-regular graphs, discrete geometry, polytopes, graph products, graphs on surfaces, maps and regular maps, graph minors, planarity of graphs and various other combinatorial concepts.

The collection contains 33 research papers, with 13 falling primarily into the category of algebraic graph theory, 10 belonging to topological graph theory, whereas the remaining 10 contributions blend algebraic and topological concepts with those from other areas of graph theory and combinatorics.

Ljubljana, March 2005.

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